

DON Smallgoods Develops Energy and Carbon Strategy

Canonical: <https://northmoregordon.com/case-studies/don-smallgoods-tools-for-an-energy-and-carbon-strategy/>

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Case-study summary

This historical case study records the project, delivery approach and reported results behind DON Smallgoods Develops Energy and Carbon Strategy . It has been reorganised for clearer reading and linked to current Northmore Gordon guidance so the project evidence can be used without treating an earlier result as a present-day quote.

Evidence note: The source page is dated March 8, 2021. Figures, scheme names, equipment assumptions and client circumstances belong to that project period. Opportunities, targets and forecasts remain distinct from implemented or verified outcomes, and current eligibility should be checked before using the case as a new-project benchmark.

Project record

Don Smallgoods (DON), part of George Weston Food Limited, operates a large processing plant at Castlemaine that produces a substantial tonnage of processed meats. The Castlemaine site has relatively complex energy systems and is located on a constrained electricity feeder.

The Goal

The Northmore Gordon team helped DON Smallgoods develop an integrated Energy Supply and Carbon Strategy for 2019-2030 taking into account:

Energy security

Energy cost

Operational complexity

Ownership/Procurement options

Carbon footprint

The Challenge

Don Smallgoods (DON), part of George Weston Food Limited, operates a large processing plant at Castlemaine that produces a substantial tonnage of processed meats. The site has relatively complex energy systems including; boilers, gas-fired cogeneration, and large refrigeration systems, and is located on a constrained electricity feeder. Energy expenditure is significant, and energy security is critical to the operations.

Increasingly, the security and cost of energy supplies to manufacturers are subject to external factors such as global initiatives (e.g. the Paris Climate Accord), Eastern Australia's export natural gas industry, Government policies around gas exploration and reservation, electricity network regulation, climate change response, business growth plans, electricity grid constraints, and emerging energy technologies. The absence of an overall energy supply and carbon strategy meant it was difficult to

make informed decisions around the energy assets and future energy supplies. For example should they integrate bio gas with natural gas, or phase out gas completely over time? Are there benefits of an on-site solar system and what are the implications for investment in the cogeneration plant? What role do renewable PPAs have, and what risks are there?

Northmore Gordon was already working closely with the site on energy productivity under a long-term partnership program, and was chosen to assist DON plan their energy supply and decarbonisation journey.

The Process

Northmore Gordon used a strategic framework that was underpinned with solid market, policy, and technical analysis.

Market Context : Up-to-date analysis was completed on national and international policy, the Australian energy market, technology trends and implications for the site, and corporate policies.

Analysis: Our Energy and Carbon experts developed a tool for modelling the financial, carbon and operational risks of different energy supply strategies and the impact over a ten-year timeframe.

Integrated Energy and Carbon strategy: An integrated energy and carbon strategy was compiled, along with suggestions on carbon reduction pathways.

Stakeholder Workshop and Scenario Development:

Stakeholders were informed of the market context, policy drivers and technology trends.

Several what-if scenarios were developed with Don's management team to allow options to be compared (e.g. how do you trade off improvements to energy security vs a rise in energy costs?).

Collective agreement was obtained on what Scenarios were to be assessed.

Outcome

Northmore Gordon helped DON consider their 10 year carbon and energy goals, and developed a tool that can model energy costs and carbon emissions into the future. This tool helps DON make strategic decisions based on different scenarios that reflect changing conditions including markets, government policy, technology and other conditions; see below.

Business as usual

Balanced change

Low carbon future

High resilience

Model Inputs:

Business growth rate

Supply reliability target

Energy efficiency plans impact

Electricity, gas and carbon offset projected market price

Model Outputs:

Financial impact (relative cost of energy, required CAPEX, NPC \[net present cost\])

Optimal employment settings for existing CHP plant

Optimal mix of quantities of on-site CHP, on-site solar PV Solar Photovoltaic, purchased green electricity and purchased carbon offsets

Level of grid dependence

Quantity of carbon offsets required

Reliability outcome.

Do you need help developing a decarbonisation strategy?

Take our quick health check to determine your Energy and Carbon Performance potential.

Established in 1947 in Castlemaine, Victoria, DON is one of Australia's largest smallgoods manufacturers, producing premium hams, bacon, salamis, and continental products.

Using the results for a new project

Start with the site's current operating profile, asset condition and business objective. Define the baseline, project boundary, variables that affect energy use and the evidence available before selecting a technology or incentive pathway. This makes the comparison auditable and keeps physical savings separate from grants, certificate revenue and other financial benefits.

For a comparable project, confirm current program rules and product requirements, document installation and commissioning, and plan post-project measurement early. Historical results can show what was possible in one setting, but they do not establish current eligibility, pricing, payback or emissions outcomes.

Related guidance

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Why did DON Smallgoods need an integrated energy and carbon strategy?

DON Smallgoods faced complexity in managing multiple energy systems—boilers, gas-fired cogeneration, and large refrigeration—while operating on a constrained electricity feeder at their Castlemaine plant. Significant energy expenditure and the criticality of energy security to operations created pressure to make informed decisions about biogas integration, gas phase-out, on-site solar viability, and renewable PPAs. Without an overall strategy, the organisation lacked a framework to evaluate these competing options against financial, carbon and operational outcomes over a 10-year horizon.

How did Northmore Gordon's strategic framework address DON's energy and carbon decisions?

We employed a structured approach combining market context analysis (policy, technology trends, energy markets), technical modelling across financial, carbon and operational risks, and scenario development through stakeholder workshops. The framework enabled DON to compare trade-offs—for

example, between energy security and cost—across four scenarios: Business as Usual, Balanced Change, Low Carbon Future, and High Resilience. This allowed informed decision-making rather than isolated equipment choices.

What did the modelling tool developed for DON Smallgoods calculate?

The energy and carbon modelling tool accepted inputs including business growth rate, supply reliability targets, energy efficiency plans, and projected electricity, gas and carbon offset prices. It calculated financial impact (energy costs, required capital expenditure, net present cost), optimal settings for the existing cogeneration plant, ideal mixes of on-site CHP and solar PV with purchased renewable electricity and carbon offsets, grid dependence levels, carbon offset quantities needed, and reliability outcomes. This enabled DON to model scenarios and their consequences systematically.

What specific energy decisions was DON Smallgoods uncertain about before the strategy?

DON faced uncertainty on several fronts: whether to integrate biogas with natural gas at the site, whether to phase out gas entirely, whether an on-site solar system would deliver value given the constrained electricity feeder, and what role renewable power purchase agreements should play in their energy mix. The absence of an integrated strategy meant these decisions were being made in isolation rather than as part of a coordinated 10-year plan aligned with carbon and cost objectives.

How can the DON Smallgoods case apply to other food and beverage manufacturers?

DON's situation—complex thermal loads, significant refrigeration, gas-based cogeneration, and grid constraints—mirrors challenges across animal processing and food manufacturing. Our framework demonstrates how to coordinate heat, cooling, and carbon decisions across a 10-year horizon rather than treating equipment choices as separate. The scenario modelling approach helps organisations compare energy security against cost and carbon outcomes, supporting investment decisions aligned with decarbonisation pathways and operational reliability.

What role did carbon offset purchasing play in DON's modelling scenarios?

Carbon offset purchasing was modelled as one variable within DON's energy mix alongside on-site generation (CHP and solar), purchased renewable electricity, and energy efficiency improvements. The tool calculated the quantity of carbon offsets required under different scenarios to meet 10-year carbon goals, allowing DON to understand the financial and operational trade-offs. This positioning of offsets within an integrated strategy—rather than as a standalone solution—reflects best practice in transition planning where physical reductions, procurement strategies, and financial instruments serve distinct roles.

Why was Northmore Gordon well-positioned to develop DON's energy strategy?

We were already engaged with the Castlemaine site through a long-term energy productivity partnership, providing deep familiarity with our equipment, operations, constraints and stakeholder landscape. This existing relationship enabled the firm to build a strategy underpinned by operational reality rather than external assumptions. The engagement demonstrates how ongoing advisory relationships support progression from tactical energy projects to strategic planning that integrates engineering, financial and carbon considerations.

What business outcomes did DON Smallgoods gain from the strategy engagement?

DON Smallgoods obtained a tool that models energy costs and carbon emissions across a 10-year horizon under different market, policy, technology and operational scenarios. This enabled the organisation to make strategic decisions informed by financial and carbon trade-offs rather than uncertain intuition. The engagement moved DON from isolated equipment decisions toward an integrated energy supply and carbon strategy aligned with their 2019-2030 planning horizon, supporting both decarbonisation goals and energy cost management.

